

## Improvements to the Safety Measurement System Methodology: *Frequently Asked Questions*

The Federal Motor Carrier Safety Administration's (FMCSA) new field-tested safety initiative, Comprehensive Safety Analysis 2010 (CSA 2010), includes a new measurement system that more effectively assesses commercial motor vehicle safety. CSA 2010's new Safety Measurement System (SMS), which will replace SafeStat later in 2010, is designed to make the Nation's roads safer. The following are some of the most frequently asked questions around recent improvements made to the test version of the SMS.

**Q. Why has the Agency decided to update the SMS test methodology?**

**A.** FMCSA conducted a 30-month Operational Model Test (Op-Model Test) in nine states to assess the efficiency and effectiveness of the new program. By design, the Op-Model Test included continual assessment of results and solicitation of stakeholder feedback, with an eye towards refinement prior to national launch. The Op-Model Test ended on June 30, 2010 and the SMS enhancements are a direct result of that process.

**Q. What refinements are being made to the SMS test methodology?**

**A.** The SMS uses seven Behavior Analysis and Safety Improvement Categories (BASICS) to assess motor carriers' safety. The BASICS are: Unsafe Driving, Fatigued Driving (Hours-of-Service), Driver Fitness, Controlled Substances/Alcohol, Vehicle Maintenance, Cargo-Related, and Crash Indicator. FMCSA has identified four opportunities to improve the SMS methodology:

1. Modifications to the measure of exposure for the Unsafe Driving BASIC and Crash Indicator
2. Refinements to the measurement approach for the Controlled Substances/Alcohol BASIC
3. Updates to the severity weights of roadside violations based on Subject Matter Expert review
4. A more strategic approach to addressing motor carriers with a history of size and weight violations, which affects the Cargo-Related BASIC

**Q. What modifications are being made to the measure of exposure for the Unsafe Driving BASIC and Crash Indicator?**

**A.** Analysis conducted by FMCSA showed measuring exposure solely by Power Units (PUs) may overly identify as deficient those carriers with high utilization rates (i.e. those carriers with greater than the national average per power unit rate). Analysis also indicated that the sole use of Vehicle

Miles Traveled (VMT) as the measure of exposure overly identified those carriers with low utilization rates as deficient. As a result, the Agency created a new approach to measure carriers' exposure on the road within the Unsafe Driving BASIC and the Crash Indicator using a combination of PUs and, when available and reliable, VMT data. The Agency is also exploring options to enhance the reliability of VMT data for future use, including potential cross checks against State databases that include VMT and enforcement action against motor carriers that report erroneous data. Additionally, the carrier population is now segmented into two groups based on the type of vehicle (combination and straight) operated so that companies operating different types of vehicles are no longer compared to each other.

**Q. What kind of refinements is FMCSA making to the measurement approach for the Controlled Substances/Alcohol BASIC?**

**A.** Op-Model Test results and law enforcement experts indicated that violations within the Controlled Substances/Alcohol BASIC are more likely to be found during an inspection rather than be the cause of an inspection, which was confirmed by analysis conducted by the Agency. The Controlled Substances/Alcohol BASIC measure of exposure will now be based on the number of relevant inspections instead of the number of PUs, as in the earlier test version of the SMS.

**Q. Should we expect to see any updates to the severity weights of roadside violations?**

**A.** Severity weights are assigned to violations in the measurement system based on a violation's relationship to crash risk. Subject Matter Experts from FMCSA's field staff, including enforcement personnel and CSA 2010 development team members, examined these severity weights and submitted recommendations to the Agency to better associate crash risk to the violations. These recommendations have been incorporated into the SMS methodology. More detailed information, including an updated list of violations and severity weights, will be published on the CSA 2010 Website on August 16, 2010.

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## Improvements to the SMS Frequently Asked Questions

### **Q. How is FMCSA addressing motor carriers with a history of size and weight violations?**

**A.** Results from the Op-Model Test have demonstrated the difficulties of enforcing size and weight violations through CSA 2010 interventions conducted by FMCSA and State Safety Investigators. Alternative methods to address this safety issue are currently under development. These methods include more refined collection of detailed size and weight violation data and alerts in systems used by roadside inspectors to identify carriers with patterns of prior size and weight violations. In the meantime, size and weight violations have been removed from the Cargo-Related BASIC. However, it is important to note that roadside inspectors will continue to cite these violations at the roadside and Safety Investigators will continue to address these violations, including potential enforcement actions if appropriate, through investigations.

### **Q. When will more information be available and where can I get it?**

**A.** FMCSA will provide motor carriers with a preview of their SMS safety assessments beginning August 16, 2010 on the CSA 2010 Website at <http://csa2010.fmcsa.dot.gov/>. The assessments will be based on the improved SMS methodology. The updated methodology document will also be posted on the Website at that time. Today motor carriers can visit the Website and log into the CSA 2010 Data Preview that was launched on April 12, 2010. It provides carriers with an inventory of their safety violations and crashes within the SMS BASICs and information on how to improve safety compliance.

### **Q. Preliminary University of Michigan Transportation Institute (UMTRI) findings indicated that two of the seven BASICs, Driver Fitness and Cargo-Related, do not have a strong relationship to future crashes. Should these findings delay implementation of CSA 2010?**

**A.** FMCSA's 30-month field test of CSA 2010 has drawn keen interest from the trucking industry, including trade publications. Recently one of these publications reported preliminary findings provided by FMCSA's independent evaluator, UMTRI, that indicate that while the majority of the BASICs have a strong relationship to future crashes, two of the seven—Driver Fitness and Cargo-Related—do not. The question was raised whether these findings would delay implementation.

In the interest of safety, and based on promising field test results, FMCSA's implementation of CSA 2010 will continue according to its published schedule available at: [http://csa2010.fmcsa.dot.gov/about/csa\\_when.aspx](http://csa2010.fmcsa.dot.gov/about/csa_when.aspx).

The SMS was designed to: (1) Identify high-risk motor carriers for priority intervention; those that have a greater propensity to be involved in future crashes, and (2) Identify motor carriers with patterns of on-road performance and compliance issues for intervention. SMS does both very well.

With respect to identifying high-risk carriers, FMCSA effectiveness testing results demonstrate that those carriers that SMS identifies as "high-risk" have much higher future crash rates than those carriers not designated as high-risk. Additionally, the effectiveness testing shows SMS identifies a group of carriers with higher crash risk than the system currently in use known as SafeStat.

SMS clearly identifies motor carriers with compliance issues as well, regardless of whether those compliance issues are linked to future crash risk through effectiveness testing. Congress has been clear that FMCSA is a compliance and enforcement agency. While the effectiveness testing may not establish a relationship with future crashes in the Driver Fitness and Cargo-Related BASICs, FMCSA, as well as industry, has an obligation to ensure compliance with the regulations that contribute to these two BASICs. These two BASICs include being properly licensed, carrying medical cards to allow verification that a driver meets the medical qualification standards, adequately securing cargo, and properly packaging and handling hazardous materials.

UMTRI's preliminary findings are in line with FMCSA's effectiveness findings in terms of future crash risk. In response, FMCSA has adjusted how it identifies carriers for investigation so that the BASICs that have the strongest relationship to future crashes receive the most emphasis. In this way, FMCSA will address those carriers with the highest propensity for future crashes as well as those with the strongest patterns of noncompliance.

### **Q. How can I prepare for the public launch of the SMS in December 2010?**

- A.**
- Review Data and Address Safety Compliance Issues Early: A view of data by BASIC is now available at <http://csa2010.fmcsa.dot.gov>. The update on August 16 will include assessments.
  - Sign Up: Sign up for the CSA 2010 email listserv at [http://csa2010.fmcsa.dot.gov/Stay\\_Connected.aspx](http://csa2010.fmcsa.dot.gov/Stay_Connected.aspx) for email updates on topics such as the Data Preview and SMS enhancements.
  - Stay Involved: Visit the CSA 2010 Website <http://csa2010.fmcsa.dot.gov> for updates on CSA 2010.

